

ABSTRACT OF THE DISCLOSURE

A method is provided for generating sustained totipotent tissue cultures of a plant of the Class Mónocotyledonae, and for micropropagating such plant *in vitro*, wherein immature inflorescence are cultivated to produce totipotent tissue which is suitable for sustained maintenance and propagation. Greening of the tissue can be induced under light and the multishoot culture can multiply by microtillering. Foreign genes can be introduced into the tissue if desired, and the transgenic plants can be used in phytoremediation technologies in the field and in phytoreactors independently of seasons.

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